CLAIMS

1. A sliding structure of a shaft member in which a shaft member is retained slidably in a guide hole, wherein a plurality of labyrinth grooves are formed in both axial end portions of the side surface of the shaft member which are located in an area, which are always in slidable contact with a side surface of the guide hole.

2. An injector which has a needle inserted into a nozzle supplied with a fuel for injection, is made up of a shaft member and is displaced in the axial direction to switch between fuel injection and termination of fuel injection; wherein

a structure in which the needle is retained slidably in a guide hole formed in the nozzle wall; or

a structure in which a valve chamber provided with a valve body for isolating a back pressure chamber from a low-pressure source is provided in a low-pressure flow path for releasing to the low-pressure source the fuel in the back pressure chamber to which a high-pressure fuel is supplied and which generates a back pressure to the needle, and a piston which is made up of a shaft member and presses the valve body into the guide hole penetrating through the wall of the valve chamber, is retained, has the sliding structure of a shaft member set forth in claim 1.